

-11-

CLAIMS

1. A mixer blade adapted to be mounted on the shaft of a vertical continuous granulating mixer, characterised in that an inner portion of the leading edge of the blade is bevelled upwards and an outer portion of the leading edge of the blade is substantially vertical or is bevelled downwards.
2. A mixer blade according to Claim 1, characterised in that the leading edge of the inner portion of the blade is bevelled upwards at an angle of 30 to 75 degrees to its direction of travel when mounted on the shaft.
3. A mixer blade according to Claim 1 or Claim 2, characterised in that the leading edge of the outer portion of the blade is bevelled downwards at an angle of 45 to 80 degrees to its direction of travel when mounted on the shaft.
4. A mixer blade according to any of Claims 1 to 3, characterised in that the inner portion of the blade whose leading edge is bevelled upwards is immediately adjacent to the outer portion of the blade whose leading edge is bevelled downwards.
5. A mixer blade according to Claim 4, characterised in that the transition point between the inner portion of the blade whose leading edge is bevelled upwards and the outer portion of the blade whose leading edge is bevelled downwards is positioned at 50 to 80% of the distance from the point where the blade is secured to the shaft to the tip of the blade.
6. A vertical continuous granulating mixer comprising a shaft fitted with blades rotating within a tubular housing and having an inlet for solid particles and a spray inlet for liquid to contact the solid particles above the blades, characterised in that an inner portion of at least one of the blades is angled forwards and upwards over at least part of its area so that particles hitting the angled portion of the blade acquire an upwards velocity component.

7. A vertical continuous granulating mixer according to Claim 6, characterised in that the leading edge of at least one of the blades is bevelled upwards.
8. A vertical continuous granulating mixer comprising a shaft fitted with blades rotating within a tubular housing and having an inlet for solid particles and a spray inlet for liquid to contact the solid particles above the blades, characterised in that at least one of the blades is a mixer blade according to any of Claims 1 to 5.
9. A vertical continuous granulating mixer according to Claim 8, characterised in that the uppermost blade or blades is according to any of Claims 1 to 5 and the mixer includes at least one lower blade which does not have a bevelled leading edge.
10. A vertical continuous granulating mixer having an upper set of blades and a lower set of blades, characterised in that at least one blade of the upper set is angled forwards and upwards over at least part of its area according to any of Claims 6 to 9 and the blades of the lower set are not angled forwards and upwards.
11. A mixer according to Claim 10, characterised in that the mixer has three sets of blades, and at least one blade of the upper set and at least one blade of the middle set are angled forwards and upwards over at least part of its area according to any of Claims 6 to 9 and the blades of the lower set are not angled forwards and upwards.
12. A granulation process in which solid particles and a liquid having binding properties are fed to a mixer and are contacted in the mixer to form granules, characterised in that the mixer is a vertical continuous granulating mixer according to any of Claims 6 to 11.

-13-

13. A process according to Claim 12 characterised in that the particles fed to the mixer are carrier particles of mean particle size in the range 1 to 10 microns.
14. A process according to Claim 12 or Claim 13 characterised in that the mean particle size of the granules produced is in the range 0.5 to 1.5 mm.